Types of Tests

The dedication and efforts of USDA/Animal and Plant Health Inspection Service/Veterinary Service (USDA/APHIS/VS) to prevent and control Johne's disease has led to increased testing accuracy and cost effectiveness.

Discussions with your veterinarian will determine which test is best for your situation. (See test regimen on reverse side) That said, no single test will detect all infected animals.

Samples should be submitted for testing to a laboratory approved to perform the specific test by the National Veterinary Services Laboratory (NVSL).

Frequency of testing and the decisions made based upon the test results will depend on what is practical for your enterprise.

Official Classification - Voluntary Bovine Johne's Disease Control Program

Herd testing and classification are an important part of the Voluntary Bovine Johne's Disease Control Program (VBJDCP), a national program developed in cooperation with the National Johne's Working Group and the Johne's committee of the United States Animal Health Association, State Veterinarians and industry representatives. VBJDCP is administered through states and supported by USDA/APHIS/VS and industry.

Dairy herds enrolling in the herd testing and classification element of VBJDCP must have completed a risk assessment and developed a herd management plan using the guidelines established and outlined in the "Prevention and Control of Johne's Disease in Dairy Herds: A Workbook for Veterinarians and Producers." Beef herds enrolling in the herd testing and classification element of VBJDCP must have completed a risk assessment and developed a herd management plan using the guidelines established and outlined in the "Prevention and Control of Johne's Disease in Beef Herds: A Workbook for Veterinarians and Producers." (Both documents can be viewed at *www.johnesdisease.org.)*

Contact your state animal health department or your Designated Johne's Coordinator to learn more about specific testing regimen and requirements for Johne's disease, the Voluntary Bovine Johne's Disease Control Program and how you can benefit from participating in your state program.

Contact information for your state's Johne's disease program is available online at *www.johnesdisease.org* and click on "State Contacts/Info."

This information is provided by:

USDA

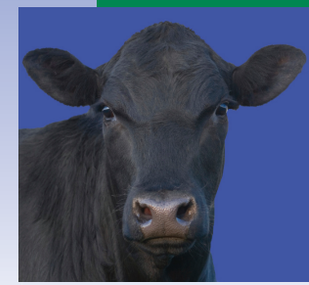
NATIONAL JOHNE'S EDUCATION INITIATIVE

NATIONAL INSTITUTE FOR ANIMAL AGRICULTURE

1910 Lyda Avenue
Bowling Green, KY 42104
270-782-9798 • Fax 270-782-0188
www.animalagriculture.org

THINK HEALTHIER BOTTOM LINE

Test for Johne's Disease & Know Your Herd's Johne's Disease Status



NATIONAL JOHNE'S EDUCATION INITIATIVE

www.johnesdisease.org

270-782-9798 • Fax 270-782-0188
1910 Lyda Avenue
Bowling Green, KY 42104

Johne's Disease: A Costly Disease

Johne's (pronounced "Yo-nees") disease is a chronic, incurable, contagious disease estimated to be present in **68 percent of U.S. dairy operations** and in **eight out of 100 U.S. beef herd**s.

- A National Animal Health Monitoring Systems (NAHMS) study found that infected herds experience an average loss of $40 per cow in herds with a low Johne's disease clinical cull rate while herds with a high Johne's disease clinical cull rate lost an average of $227 per cow. This loss was due to reduced milk production, early culling, and poor body condition at culling.
- Beef cows clinically infected with Johne's disease produce less milk, resulting in lighter calves at weaning, and infected cows can be slower to breed back.

Although bacterial-causing organisms ordinarily infect calves, infected animals tend not to show clinical signs until they are three or more years of age. Infected animals maintain a normal temperature, but, as the disease progresses, they exhibit diarrhea and weight loss despite a healthy appetite. In the later stages of the infection, animals can become weak and even die.

The bacterium that causes Johne's disease is *Mycobacterium paratuberculosis*, first reported in the United States in 1908.

Infected animals shed large numbers of the disease-causing bacteria in their feces, leading to contamination of feed and water sources. Infected animals can also shed the bacteria in their colostrum and milk, and infected dams can pass the disease on to their offspring.

M. paratuberculosis is an extremely hardy bacterium. Research shows that, while the bacterium cannot multiply outside the animal in nature, it can survive in contaminated soil or water for more than a year because of its resistance to heat, cold and drying.

Johne's disease must be managed as a herd problem and not tackled as an individual cow disease. Research shows that diagnosis of one clinically infected animal in a herd of 100 cows implies that at least 25 other animals are infected.

Why Test?

If you have culled one or more animals for unresponsive chronic diarrhea combined with reduced milk production and thin condition, then suspect Johne's disease. Experts maintain that cows are leaving herds way too fast—before they are tested for Johne's disease.

Photo courtesy of Geni Wren, Bovine Veterinarian

Testing for Johne's disease can help you:

1. Determine if an animal exhibiting definite clinical signs is Johne's disease positive and should be culled.
2. Identify infected animals with suspicious clinical signs early before they further contaminate facilities and decrease salvage value.
3. Evaluate the extent of infection in your herd.
4. Monitor progress of control efforts.
5. Know if you are marketing infected or low-risk cattle and, as a result, know if your cattle are spreading the disease to producers' herds or if you are helping producers prevent Johne's disease from entering their herd.
6. Know if you are about to purchase a Johne's disease test-positive or low-risk animal before it's brought into the herd.

To help prevent Johne's disease and to limit the spread of Johne's disease among herds, producers are encouraged to purchase replacement animals, including bulls and recipients, only from known source herds that are low risk or have a known herd status, based upon their Johne's disease classification or herd testing history. Thus, producers who officially test their herds as low risk for Johne's disease and have third-party verification of their Johne's disease status have an advantage over herds without such verification.

Before doing any testing, producers should know their goals for testings and how they will use any test results.

[1]Recommended test regimen for the detection of Johne's disease in cattle based on herd type and testing purpose.

TESTING PURPOSE	DAIRY		BEEF	
	Seedstock	Commercial	Seedstock	Cow-Calf
Confirm a clinical diagnosis in a herd with no prior confirmed JD cases	Biopsy specimens, necropsy, bacterial culture or PCR assay - individual animals	Necropsy, bacterial culture or PCR assay - individual animals	Biopsy specimens, necropsy, bacterial culture or PCR assay obtained from individual animals	Necropsy, bacterial culture or PCR assay - individual animals
Confirm a clinical diagnosis in a herd with prior confirmed JD cases	Biopsy specimens, necropsy, bacterial culture or PCR assay - individual animals	ELISA, bacterial culture or PCR assay - individual animals	Biopsy specimens, necropsy, bacterial culture or PCR assay - individual animals	ELISA, bacterial culture or PCR assay - individual animals
Herd classification-infected or not infected*	Bacterial culture of environmental fecal samples	Bacterial culture of environmental fecal samples	Whole-herd testing, target testing or bacterial culture of environmental samples	Whole-herd testing, target testing or bacterial culture of environmental samples
Control disease in herd with known infection, high prevalence and clinical disease and owner is concerned	Bacterial culture - individual animals	ELISA	Bacterial culture - individual animals	ELISA
Surveillance (estimation of biological burden)	Not recommended	Bacterial culture of environmental samples	Not recommended	Bacterial culture of clinically suspect animals.
Eradication	Bacterial culture by individual or by pooled fecal samples (5 fecal samples/pool)**	Bacterial culture by individual or by pooled fecal samples (5 fecal samples/pool)**	Bacterial culture - individual animals	Bacterial culture - individual animals

* For declaring Voluntary Bovine Johne's Disease Control Program Test Negative Status, use the testing strategies outlined in the Uniform Program Standards for the Voluntary Bovine Johne's Disease Control Program.

** Pooled samples should be considered only with low prevalence herds. Pooled samples should be collected in accordance with the Uniform Program Standards from areas in which cattle commingle.

[1] "Consensus recommendations on diagnostic testing for the detection of paratuberculosis in cattle in the United States," Michael T. Collins, DVM, PhD, DACVM; Ian A. Gardner, BVSc, MPVM, PhD; Franklyn B. Garry, DVM, MC, DACMIM; Allen J. Roussel, DVM, MC, DACVIM; Scott J. Wells, DVM, PhD, DACVPM; JAVMA, Vol. 229, No. 12, December 15, 2006.